CLAIMS

1. A method for incorporating at least one additive into a thin film formed on a substrate comprising:

forming an impregnatable thin film on at least one face of a substrate;

depositing an impregnation composition comprising at least one additive incorporated in an appropriate diluent medium on said impregnatable thin film by spin coating;

diffusing the impregnation composition within said impregnatable thin film and;

treating the substrate coated with the impregnated thin film to at least partially remove the diluent medium from the impregnated thin film.

2. The method of claim 1, wherein treating the substrate coated with the impregnated thin film to at least partially remove the diluent medium from the impregnated thin film comprises a thermal treatment.

3. The method of claim 1, wherein the formation of said thin film comprises the deposit on at least said face of the substrate of a precursor material by dipping or spin coating.

4. The method of claim 1, wherein the precursor material of said thin film is a polymer composition.

5. The method of claim 4, wherein the polymer composition is a latex.

6. The method of claim 5, wherein the latex is a polyurethane latex.

7. The method of claim 4, wherein the impregnation composition also contains an agent for crosslinking the polymer composition.

8. The method of claim 7, wherein the crosslinking agent is an epoxyalkoxysilane hydrolysate, preferably an epoxytrialkoxysilane hydrolysate.

9. The method of claim 8, wherein the epoxytrialkoxysilane is γ-glycidoxypropyltrimethoxysilane.

10. The method of claim 7, wherein the impregnation composition also contains a hardening agent.

11. The method of claim 10, wherein the hardening agent is an aluminium chelate, preferably aluminium acetylacetonate.

12. The method of claim 1, wherein the substrate is an inorganic glass or an organic glass.

13. The method of claim 12, wherein the organic glass is a polycarbonate glass.

14. The method of claim 1, wherein the additive or additives are selected from the pigments, the UV absorbers, the dyes, the photochromic compounds and the plastifiers, preferably from the pigments, the dyes and the photochromic compounds.

15. The method of claim 1, wherein the substrate is uncoated or already coated.

16. The method of claim 1, wherein the substrate is an ophthalmic lens.

17. The method of claim 1, further comprising depositing an anti-scratch coating on the impregnated thin film.

18. The method of claim 17, wherein the deposit of the anti-scratch coating is performed by dipping or by spin coating.

19. The method of claim 1, further defined as a method for the coloration of ophthalmic lenses.

20. An ophthalmic lens comprising an optically transparent substrate, wherein the substrate is coated, on at least one face, with an optically transparent impregnatable thin film, adhering to the substrate and comprising an impregnation composition.

21. The opthalmic lens of claim 20, wherein the impregnatable thin film is produced from a polymer material, preferably obtained from a latex.

22. The opthalmic lens of claim 21, wherein the impregnatable film is produced from a polymer material obtained from a polyurethane latex.

23. The opthalmic lens of claim 20, wherein the impregnation composition is a solution or dispersion, in a diluent medium, of the additive to be incorporated.

24. The opthalmic lens of claim 20, wherein the impregnation composition contains an agent for retaining the additive, preferably a crosslinking agent.

25. The opthalmic lens of claim 20, wherein the additive incorporated in the impregnatable film is a dye.

26. The opthalmic lens of claim 25, wherein the impregnatable film in which the additive is incorporated is coated with an anti-scratch coating, preferably based on a silane hydrolysate.